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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/772,360

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Hitoshi Furukawa

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EXAMINER

MILIA, MARK R

ART UNIT

PAPER NUMBER

2625

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/772,360	<b>Applicant(s)</b> FURUKAWA, HITOSHI	
	<b>Examiner</b> Mark R. Milia	<b>Art Unit</b> 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,7,8,10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,7,8,10 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment was received on 6/30/09 and has been entered and made of record. Currently, claims 1, 3-4, 7-8, and 10-11 are pending.

### ***Response to Arguments***

2. Applicant's arguments, see pages 7-11 of the remarks, filed 6/30/09, with respect to the rejection(s) of claim(s) 1, 3-8, and 10-11 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the current amendment to independent claims 1 and 11 and newly found prior art.

### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3-6, 8, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanyu (US 7,131,124) in view of U.S. Patent Application Publication No. 2002/0018665 to Muto.

Regarding claim 1, Hanyu discloses a data transfer method between a first controller which controls an engine section for forming an image and a second controller which transmits image data to the first controller, wherein the engine section includes a nonvolatile memory, wherein in an image forming operation mode of forming an image with the engine section, the method comprises: notifying the second controller of a condition change of the engine section by the first controller, (see Fig. 3 and column 8 line 59-column 9 line 60, input section **502** determines when an instruction to download a control program from a host computer is input via a control panel **303** and if so, the engine controller **301** terminates all operations of the printer engine and clears the flash EEPROM **301b** as to ready the flash EEPROM for download on the new control program. After the engine controller **301** completes the above tasks, it sends a demand for transmission, which is also seen as a notification that the engine controller is ready for control program download, to the printer controller **300**, which in turn acquires the control program from the host and then transfers the control program frame by frame to the engine controller **301** for writing of the program into memory, flash EEPROM **301b**), and transmitting a condition request instruction by the second controller to the first controller via a data signal line, in response to the notification of the condition change (see column 9 lines 4-10, in response to a download instruction the engine controller **301** terminates the operation of each component of the printer engine **302**), and wherein in a rewrite mode of rewriting the nonvolatile memory, the method comprises: transmitting a rewrite instruction by the second controller to the first controller (see Fig. 3, column 4 lines 47-49, column 7 lines 30-34 and 48-54, column 8 lines 59-67, and

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column 9 lines 3-50, synchronization is established after an instruction to download a control program is detected, then the engine controller requests transmission of a downloaded program from the printer controller, which in turn receives the downloaded program from the host computer, thereby instruction to retrieve the downloaded control program is initiated and in response the control program is transferred to the engine controller and the flash memory is rewritten with the new program), transmitting rewrite data by the second controller to the first controller via the data signal line, in response to the rewrite instruction, and rewriting the nonvolatile memory of the engine section by the first controller, by the rewrite data transmitted from the second controller (see Fig. 3, column 8 lines 1-8, and column 9 lines 51-65).

Hanyu does not disclose expressly notifying a condition change by changing a signal level of a report signal line from a first level to a second level, transmitting a condition request instruction by the second controller to the first controller via a data signal line, after the signal level is changed to the second level, transmitting condition information by the first controller to the second controller via the data signal line in response to the condition request instruction, after the signal level is returned to the first level, and transmitting an instruction by the second controller to the first controller via the data signal line, while the signal level is at the first level, transmitting data by the second controller to the first controller via the data signal line, after the signal level is changed to the first level by the first controller in response to the rewrite instruction, and rewriting the nonvolatile memory of the engine section by the first controller after the

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signal level is changed from the first level to the second level, by the rewrite data transmitted from the second controller.

Muto discloses notifying a condition change by changing a signal level of a report signal line from a first level to a second level (see paragraphs 58 and 69, signal line /CCRT is used to inform status change in the printer to print controller **213**), transmitting a condition request instruction by the second controller to the first controller via a data signal line, after the signal level is changed to the second level (see paragraph 69, signal /CCRT shifts from a high level to a low level when a change is detected in the printer, after which the printer controller **213** issues a command requesting the status) transmitting condition information by the first controller to the second controller via the data signal line in response to the condition request instruction, after the signal level is returned to the first level (see paragraphs 68, 71, and 73, after the change has cleared /CCRT returns to a high level and then the print controller **213** issues a print request), and transmitting an instruction by the second controller to the first controller via the data signal line, while the signal level is at the first level (see paragraph 65, when image information becomes ready in the printer controller **213**, the /PRNT signal to the engine controller **202** is shifted to a low level), transmitting data by the second controller to the first controller via the data signal line, after the signal level is changed to the first level by the first controller in response to the instruction (see paragraphs 68, 71, and 73, when the printer controller **213** issues a command to the engine controller **202**, the /CBSY signal is shifted to a low level state, at which time the status of the engine is transmitted, and then the /CBSY signal returns to the high level and the printer

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controller **213** continues to request printing), and writing the nonvolatile memory of the engine section by the first controller after the signal level is changed from the first level to the second level, by the write data transmitted from the second controller (see paragraphs 68, 71 and 73, when the printer controller **213** issues a command to the engine controller **202**, the /CBSY signal is shifted to a low level state, at which time the status of the engine is transmitted, and then the /CBSY signal returns to the high level and the printer controller **213** continues to request printing).

Regarding claim 11, Hanyu discloses an image forming apparatus including a first controller which controls an engine section for forming an image and a second controller which transmits image data to the first controller, wherein the engine section includes a nonvolatile memory, and wherein the image forming apparatus is configured to operate in an image forming operation mode of forming an image with the engine section, or a rewrite mode of rewriting the nonvolatile memory, the apparatus comprising: means for, in the image forming operation mode, notifying the second controller of a condition change of the engine section by the first controller, (see Fig. 3 and column 8 line 59-column 9 line 60, input section **502** determines when an instruction to download a control program from a host computer is input via a control panel **303** and if so, the engine controller **301** terminates all operations of the printer engine and clears the flash EEPROM **301b** as to ready the flash EEPROM for download on the new control program. After the engine controller **301** completes the above tasks, it sends a demand for transmission, which is also seen as a notification that the engine controller is ready for control program download, to the printer controller **300**, which in

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turn acquires the control program from the host and then transfers the control program frame by frame to the engine controller **301** for writing of the program into memory, flash EEPROM **301b**), means for, in the image forming operation mode, transmitting a condition request instruction by the second controller to the first controller, in response to the notification of the condition change (see column 9 lines 4-10, in response to a download instruction the engine controller **301** terminates the operation of each component of the printer engine **302**), means for, in the rewrite mode, transmitting a rewrite instruction by the second controller to the first controller (see Fig. 3, column 4 lines 47-49, column 7 lines 30-34 and 48-54, column 8 lines 59-67, and column 9 lines 3-50, synchronization is established after an instruction to download a control program is detected, then the engine controller requests transmission of a downloaded program from the printer controller, which in turn receives the downloaded program from the host computer, thereby instruction to retrieve the downloaded control program is initiated and in response the control program is transferred to the engine controller and the flash memory is rewritten with the new program), means for, in the rewrite mode, transmitting rewrite data by the second controller to the first controller, in response to the rewrite instruction, and means for, in the rewrite mode, rewriting the nonvolatile memory of the engine section by the first controller, by the rewrite data transmitted from the second controller (see Fig. 3, column 8 lines 1-8, and column 9 lines 51-65).

Hanyu does not disclose expressly means for, in the image forming operation mode, notifying the second controller of a condition change of the engine section by the first controller, by changing a signal level of the report signal line from a first level to a



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second level, means for, in the image forming operation mode, transmitting a condition request instruction by the second controller to the first controller via a data signal line, after the signal level is changed to the second level, means for, in the image forming operation mode, transmitting condition information by the first controller to the second controller via the data signal line in response to the condition request instruction, after the signal level is returned to the first level, and means for, transmitting an instruction by the second controller to the first controller via the data signal line, while the signal level is at the first level, means for, transmitting data by the second controller to the first controller via the data signal line, after the signal level is changed to the first level by the first controller in response to the rewrite instruction, and means for rewriting the nonvolatile memory of the engine section by the first controller after the signal level is changed from the first level to the second level, by the rewrite data transmitted from the second controller.

Muto discloses means for, in the image forming operation mode, notifying the second controller of a condition change of the engine section by the first controller, by changing a signal level of the report signal line from a first level to a second level (see paragraphs 58 and 69, signal line /CCRT is used to inform status change in the printer to print controller **213**), means for, in the image forming operation mode, transmitting a condition request instruction by the second controller to the first controller via a data signal line, after the signal level is changed to the second level (see paragraph 69, signal /CCRT shifts from a high level to a low level when a change is detected in the printer, after which the printer controller **213** issues a command requesting the status)

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means for, in the image forming operation mode, transmitting condition information by the first controller to the second controller via the data signal line in response to the condition request instruction, after the signal level is returned to the first level (see paragraphs 68, 71, and 73, after the change has cleared /CCRT returns to a high level and then the print controller **213** issues a print request), and means for transmitting an instruction by the second controller to the first controller via the data signal line, while the signal level is at the first level (see paragraph 65, when image information becomes ready in the printer controller **213**, the /PRNT signal to the engine controller **202** is shifted to a low level), means for transmitting data by the second controller to the first controller via the data signal line, after the signal level is changed to the first level by the first controller in response to the instruction (see paragraphs 68, 71, and 73, when the printer controller **213** issues a command to the engine controller **202**, the /CBSY signal is shifted to a low level state, at which time the status of the engine is transmitted, and then the /CBSY signal returns to the high level and the printer controller **213** continues to request printing), and means for writing the nonvolatile memory of the engine section by the first controller after the signal level is changed from the first level to the second level, by the write data transmitted from the second controller (see paragraphs 68, 71 and 73, when the printer controller **213** issues a command to the engine controller **202**, the /CBSY signal is shifted to a low level state, at which time the status of the engine is transmitted, and then the /CBSY signal returns to the high level and the printer controller **213** continues to request printing).

Hanyu & Muto are combinable because they are from the same field of endeavor, writing of data via signal lines.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the use of signal and reporting lines that indicate condition change and status information, as described by Muto, and which is well known and commonly used in the art, with the system of Hanyu.

The suggestion/motivation for doing so would have been to decrease the possibility of errors during rewriting of data by notifying status and condition changes and busy and ready states to ensure proper writing of data is executed.

Therefore, it would have been obvious to combine Muto with Hanyu to obtain the invention as specified in claims 1 and 11.

Regarding claim 3, Hanyu further discloses in the image forming operation mode, transmitting a condition of the engine section by the first controller to the second controller (see column 9 lines 4-10 and 32-37, in response to a download instruction the engine controller **301** terminates the operation of each component of the printer engine **302**. After the engine controller **301** completes the above tasks, it sends a demand for transmission, which is also seen as a notification that the engine controller is ready for control program download, to the printer controller **300**, which in turn acquires the control program from the host and then transfers the control program frame by frame to the engine controller **301** for writing of the program into memory, flash EEPROM **301b**). Muto further discloses in the rewrite mode, transmitting a condition of the first controller

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by the first controller to the second controller via the data signal line, after the signal level is changed from the first level to the second level (see paragraphs 68, 71 and 73, when the printer controller **213** issues a command to the engine controller **202**, the /CBSY signal is shifted to a low level state, at which time the status of the engine is transmitted, and then the /CBSY signal returns to the high level and the printer controller **213** continues to request printing).

Regarding claim 4, Hanyu further discloses wherein the condition of the first controller is one of a data transfer error, an erase or rewrite operation result of the nonvolatile memory, and an end of the rewrite operation of the nonvolatile memory (see column 5 lines 14-20 and column 9 line 66-column 10 line 5).

Regarding claim 8, Hanyu further discloses wherein the rewrite data is a control program code data (see column 3 lines 50-54, column 3 line 66-column 4 line 3, and column 4 lines 47-49).

Regarding claim 10, Hanyu further discloses wherein the nonvolatile memory is a flash memory (see Fig. 3 **301b**).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hanyu (US 7,131,124) and Muto (US 2002/0018665) as applied to claim 1 above, and further in view of Ootani et al. (US 2003/0093612).

Regarding claim 7, Hanyu and Muto do not disclose expressly a step in the rewrite mode of determining that an error occurs in a rewrite operation based on a time period before the signal level is changed to the first level from the second level.

Ootani discloses a step in the rewrite mode of determining that an error occurs in a rewrite operation based on a time period before the signal level is changed to the first level from the second level (see paragraphs 56-57).

Hanyu, Muto, & Ootani are combinable because they are from the same field of endeavor, writing of data via signal lines.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the error determination based on a time period, as described by Ootani, and which is well known and commonly used in the art, with the system of Hanyu and Muto.

The suggestion/motivation for doing so would have been to decrease the possibility of errors during rewriting of data by detecting errors based on the elapse of a certain time period to ensure proper writing of data is executed.

Therefore, it would have been obvious to combine Ootani with Hanyu and Muto to obtain the invention as specified in claim 7.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark R. Milia whose telephone number is (571)272-7408. The examiner can normally be reached M-F 8:00am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached at (571) 272-7437. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mark R. Milia  
Examiner  
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